

BNL Groundwater Protection Group
Responses to NYSDEC Comments (6/29/2021) on the Design Report for the PFAS Source Area Groundwater Remediation Project

Comment Number	Section	Comment	Response
Letter from Brian Jankauskas (NYSDEC) to Robert Gordon (DOE) Dated June 29, 2021.			
1	Page 4 Groundwater Modeling	Indicates that elevated 1,4-dioxane will be captured from select extraction wells. The design should permit modifications to reduce 1,4-dioxane concentrations if system effluent warrants additional treatment.	Modeling was used to optimize the design to capture the high concentration portions of the PFAS plume while minimizing the capture of 1,4-dioxane. Based upon the characterization and modeling results, it is expected that 1,4-dioxane concentrations in the treated effluent will be below anticipated discharge limits and no additional treatment will be necessary. There are no detections of 1,4-dioxane in the source area near the Current Firehouse. 1,4-Dioxane was first encountered in deeper sampling zones south of Mitchell Lane (Figure 9). The 1,4-dioxane values are shown at each GP location that was sampled for 1,4-dioxane. In the event that 1,4-dioxane concentrations in the downgradient extraction wells are higher than the characterization results indicate, the treatment system influent/effluent concentrations can be managed by modifying the pumping rates in these wells. Any need for treatment of 1,4-dioxane will be addressed in the RI/FS for OUVIII and not as part of this source area removal system for PFAS.
2	Recommendations Page 5, Table	Suggest including nearest sample location that warranted placement of an extraction well.	The extraction well locations will be added to Figure 1 and Figure 11. A reference to these figures for each extraction well will also be added in the table on page 5.
3	Figure 1A	Figure shows monitoring wells and extraction well locations, suggest extraction wells be indicated in the title and legend. Suggest including capture zone for extraction wells in the legend or removing them from the figure. Verify if the extraction well CF-RW-H will capture the eastern portion of the plume identified as	The figure title and legend will be updated to include extraction wells. The blue circles will be removed from around the extraction wells as they were not model generated capture zones. On page 6 of 7 of Appendix B it is stated that "In aggregate, the area of capture

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		greater than 100 ng/l, which was utilized as capture criteria in the groundwater model discussion on page 4. The Arcadis model does indicate that the southern extraction wells were shifted 300 feet to the west.	established by the CFH-PFAS remedial well system is predicted to capture the 100 ng/L PFAS plume.”
4	Cross Section Figures	Verify legend for contours as indicates PFAS but appears to represent PFOS (e.g. PFC-GP-88 second to last interval detected total PFAS >500 ng/l, see Figure 9, but this interval is located outside of the 500 ng/l PFAS contour).	Only PFOS and PFOA concentrations are presented on the maps and cross sections. Because PFOS is the predominant contaminant, for clarity the legends for each figure will be changed to reflect that the contours represent PFOS concentrations.
5	Cross Section	Consider including screen intervals for extraction wells similar to Figures 20 and 21 for the Former Firehouse and in Arcadis Attachment. Monitoring well screen intervals should be included if space permits. This will clearly convey how contamination will be captured and monitored.	We can add the extraction well screens on the east-west cross sections for the Current Firehouse. Because of the number of monitoring wells involved in this project (83 proposed) it is not practical to include them in a cross section view. However, the locations and screen intervals are shown on Figures 1A and 11A.
6	Figure 11A	Figure shows monitoring wells and extraction well locations, suggest extraction wells be indicated in the title and legend.	This will be added to the legend.
7	Drawing T-1	Verify if any changes are necessary as the Former Firehouse appears to be called out, but the arrow to the Current Firehouse appears to be to the south of the Current Firehouse. Page 3, PFAS Capture section indicates that treated water for the Former Firehouse will be sent to RA V Basin and treated water for the Current Firehouse will be sent to OU III Basin and RA V Basin, but piping from the Current Firehouse does not show the connection to both basins. Consider identifying the basins, Building 749 indicated in the text and Building 598 indicated in the Action Memorandum.	The arrow for the Current Firehouse is pointing to the general project location and not directly to the Current Firehouse. This is just a general location map for the project areas. Labels for the OU III Basin, Building 749 and Building 598 will be added to this figure. A dashed line indicating the existing piping between the OU III basin and the RAV basin will also be added to this figure.

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8	Drawing SP-1	Verify monitoring well information as indicates 8 wells are planned for each area, but text indicates more wells for each area.	The monitoring well table will be removed from this figure. A note will be added to state that Figures 1A and 11A show the complete list of monitoring wells and screen intervals.
9	Arcadis Modeling Report, Current Firehouse Attachment 2	This figure shows the plume and proposed extraction well locations. Contamination >100 ng/l at GP-68 spans from elevation 40 ft above sea level to 50 ft below sea level. The proposed extraction well to capture this contamination, CF-RW-E, is located from 30 to 50 ft below sea level. Verify if this screen interval is sufficient to capture the full column of contamination.	The bottom of the extraction well screen in this area correlates with the deeper contamination in GP-68 and the model capture zone analysis indicates it will be captured.
10	Arcadis Modeling Report, Current Firehouse Attachment 2 and Attachment 3	Attachment 2 shows GP-90 with CF-RW-H and Attachment 3 shows GP-88 and GP89 with CF-RW-F. Verify if CF-RW-H should be paired with GP-89.	Please see Figure 1 in the Design Report which also shows the two cross section lines (G and G1) and has the GP data on them. We will add an Attachment 4 that shows the extraction well screens along Princeton Ave. on cross section F-F'.